ISSN (print) 0093-4666 © 2012. Mycotaxon, Ltd. ISSN (online) 2154-8889

MYCOTAXON

http://dx.doi.org/10.5248/121.419

Volume 121, pp. 419–423 *July–September 2012*

Mycobilimbia and *Rinodina* species new to Turkey

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Abstract — *Mycobilimbia pilularis* and *Rinodina balanina* were determined as new to Turkey and the Middle East following a recent lichenological foray in Iğdır region (Turkey). Geographic distribution, substrate, chemistry, and comparisons with morphologically similar taxa are presented.

Key words — *Ascomycota*, biodiversity, lichen

Introduction

Recently, many new lichen taxa have been recorded for the lichen mycota of Turkey (e.g. Candan & Halici 2009, Halici & Aksoy 2009, Karagöz et al. 2011, Kinalioglu 2010a,b, Kinalioglu & Aptroot 2010, Osyczka et al. 2011, Yazici & Aslan 2009, Yazici et al. 2010a,b,c, 2011a,b). Nonetheless, in comparison to that from other European countries, many regions of Turkey remain poorly known. Only two papers (Yazici et al. 2011a, 2012) have previously reported lichens from Iğdır region.

During a recent excursion in Iğdır region (Turkey), we sampled some lichens, among which *Mycobilimbia pilularis* and *Rinodina balanina* were determined as new to Turkey. Two *Mycobilimbia* taxa and 52 *Rinodina* taxa have previously been reported from Turkey.

Iğdır is one of the poorest forested areas in Turkey and is dominated by steppe, which is covered by rich grassy plants. Hoşhaber village and the southern Halfeli district are exposed to high light conditions and is a windswept open area with gently sloped terrain dominated by grass, rocks, and streams (Baytop & Denizci 1963). The climate in the Iğdır region is characterized by hot, dry summers and cold, snowy winters. The mean annual temperature is 11.6 °C, humidity is 63%, and the mean annual rainfall is 257.6 mm. Summers are characterized by moderate precipitation and the winters generally by high precipitation (Akman 1999).

Material & methods

Lichen samples were collected during a March 29–July 12, 2010, lichenological research foray in the Iğdır region. Air-dried samples were examined with Nikon SMZ1500 stereomicroscope and a Nikon Eclipse 80i light microscope. Secondary metabolites and identifications were determined by consulting the literature (Dobson 2005, Poelt 1974, Poelt & Vězda 1981, Thomson 1997, Wirth 1995). The descriptions are based on our examined specimens and our own observations.

Vouchers are stored in the herbarium of the Biology Department, Karadeniz Technical University, Trabzon, Turkey (KTUB).

Species recorded

Fig. 1. *Mycobilimbia pilularis,* habitus. Scale= 1mm.

Mycobilimbia pilularis (Körb.) Hafellner & Türk, Stapfia 76: 153.2001 Fig 1

Thallus thin, finely granular-effuse, green-white to greenish-gray, resembling granules. Apothecia lecideine (biatorine), pink-orange or buff coloured about 0.4–0.6 mm in diam.; discs plane at first, then convex with proper margin excluded, often clustered with pale orange-pink to pale reddish-brown. Immature apothecia have pale, slightly prominent margins. Asci cylindrical-clavate, 8-spored; ascospores colourless, oblong-fusiform, smooth, 1-septate (a few old spores 3-septate), 15–17(–19) × 4.5–6.0 µm. Hymenium, hypothecium and epithecium colourless. Thallus and cortex K–, C–, KC–, P–. Pycnidia absent. Photobiont chlorococcoid.

Mycobilimbia pilularis found growing on mosses near the stream in a little pitched canyon. It grows on near the bases of mossy bark of mature deciduous

ash (*Fraxinus*) and oak (*Quercus*) trees, on the trunks in humid valleys, rarely on mosses over sandstone rock by streams in humid forests, and on soil especially near tree trunk bases in humid forests. Usually epiphytic, *M. pilularis* may rarely grow on rocks from the submediterranean belt to the oroboreal belt of the Alps. Previously known from Europe, North America, and Asia (Smith et al. 2009). New to Turkey and the Middle East.

Specimen examined: **TURKEY**. **Iğdır:** Center, Hoşhaber village-Kızkabir, 39°52′33.08″N 43°51′59.60″E, on mosses near the stream in a little pitched canyon, 1370m, 29.03.2010, KTUB 2105.

Remarks — *Mycobilimbia pilularis* is similar to *Bilimbia sabuletorum* (Schreb.) Arnold and *Mycobilimbia carneoalbida* (Müll. Arg.) S. Ekman & Printzen, but *B. sabuletorum* has a greenish epithecium, brown hypothecium. tan apothecia that become brown or blackish, and 3–5-septate spores (14–)18–27 × 5–6 µm. *Mycobilimbia carneoalbida* is distinguished by 3-septate ascospores.

Fig. 2. *Rinodina balanina,* habitus. Scale= 1mm.

Rinodina balanina (Wahlenb.) Vain., Ark. Bot. 8(4): 69.1909 Fig 2

Thallus placodioid, rosette-forming, up to 3–4 cm wide, brown to gray-brown, isidiate-sorediate, radial effigurate, slightly frosted appearance; marginal lobes thick, irregularly branched (divided-notched), to 0.4 mm wide, 1–2 mm long, contiguous, inner part globulose-areolate, covered with round, closely flaky-warty aggregated, short isidia (appearance of dense isidia-pad) towards the center or with frequent coarse soredia. Apothecia 0.1–0.5 mm diam. Asci

clavate, 8-spored; ascospores *Orcularia*-type, 15–18 × 9–11µm. Thallus and cortex K–, C–, KC–, P–. Photobiont *Trebouxia*.

Rinodina balanina grows on well-manured, bird-dunged rocks along arctic shores, common. Previously known from Europe, Asia, and North America (Thomson 1997). New to Turkey and the Middle East.

Specimens examined: **TURKEY. Iğdır:** Center, south of Halfeli town, 39°51′54.84″N 43°56′53.53″E, on calcareous rock, 1180 m, 29.03.2010, KTUB 2103.

Acknowledgements

I am grateful to Dr. Ave Suija, Dr. Ludmilla F. Untari, and Dr. André Aptroot for linguistic revision and helpful comments on an earlier draft of this manuscript. I also thank to Dr. André Aptroot for the identification of lichen species. This study was supported by TUBITAK (project 108T566).

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